

**DRAFT CLAIM AMENDMENTS**

***For discussion purposes only***

U.S. Patent Application No: 10/029,559

Attorney Docket No: 021630-001200US

1-71. (Canceled)

72. (Currently amended) A radially expandable stent comprising:

a first portion that comprises a serpentine ring that defines  $n$  proximal apices and  $n$  distal apices;

a second portion that comprises a serpentine ring that defines  $n/2$  proximal apices and  $n/2$  distal apices; and

connector elements integrally formed with the  $n$  distal apices of the first portion, wherein each of the connector elements has an integrally formed proximal end and a terminal distal end.

73. (Previously presented) The radially expandable stent of claim 72 wherein  $n/2$  of the  $n$  proximal apices of the first portion are integrally connected with the  $n/2$  distal apices of the second portion.

74. (Previously presented) The radially expandable stent of claim 72 wherein the serpentine ring of the second portion comprises  $n$  interconnected struts wherein the interconnection between adjacent struts form the  $n/2$  proximal and the  $n/2$  distal apices, wherein at least one of the  $n$  struts comprises a barb.

75. (Previously presented) The radially expandable stent of claim 74 wherein every other strut comprises a barb.

76. (Previously presented) The radially expandable stent of claim 75 wherein the struts adjacent the struts that comprise the barbs comprise a barb tuck pad.

77. (Previously presented) The radially expandable stent of claim 75 wherein the struts adjacent the struts that comprise the barbs comprise a barb tuck slot.

78. (Previously presented) The radially expandable stent of claim 74 wherein the barbs have a length between about 1 mm to about 5 mm.

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79. (Previously presented) The radially expandable stent of claim 74 wherein the barbs have a length between about 2 mm to about 4 mm.

80. (Previously presented) The radially expandable stent of claim 72 wherein the serpentine ring of the second portion comprises  $n$  interconnected struts wherein the interconnection between adjacent struts form the  $n/2$  proximal and the  $n/2$  distal apices, wherein a width of the struts are tapered between the proximal apices and distal apices.

81. (Previously presented) The radially expandable stent of claim 80 wherein the struts have a maximum strut width at the proximal apices or distal apices and a minimum strut width between the proximal apices and the distal apices.

82. (Previously presented) The radially expandable stent of claim 81 wherein a ratio of the maximum strut width to minimum strut width is between about 1:1 and about 10:1.

83. (Currently amended) The radially expandable stent of claim 74 wherein the struts define a longitudinal axis, wherein at least one barb **[[is]]** projects radially outward from the longitudinal axis at an elevation angle between about 10 degrees to about 45 degrees.

84. (Previously presented) The radially expandable stent of claim 83 wherein at least one barb projects at an azimuth angle relative to the longitudinal axis of the strut between about 5 to about 70 degrees so that the barb is laterally biased in a plane that is tangent to an outside surface of the strut.

85. (Currently amended) The radially expandable stent of claim 74 wherein the barb(s) are integrally formed as part of the at least one strut.

86. (Previously presented) The radially expandable stent of claim 72 wherein the radially expandable stent defines a length and the first portion and second portion define outer diameters,

wherein the outer diameters of the radially expandable stent varies along the length.

87. (Previously presented) The radially expandable stent of claim 72 wherein the radially expandable stent defines a length and the first portion and second portion define an outer diameter,

wherein the outer diameter of the radially expandable stent is substantially constant along the length.

88. (Previously presented) The radially expandable stent of claim 72 wherein the n connector elements are configured to be coupled to connector elements of a connector member.

89. (Previously presented) The radially expandable stent of claim 88 wherein the connector member comprises a serpentine ring that comprises n apices.

90. (Previously presented) The radially expandable stent of claim 72 wherein the connector elements comprise opposing shoulder portions at a proximal end and a distal end.

91. (Previously presented) The radially expandable stent of claim 72 wherein at least one of the first portion and second portion comprise grooves.

92. (Previously presented) The radially expandable stent of claim 72 wherein the stent is self-expandable from a constrained state to an expanded state.

93. (Previously presented) The radially expandable stent of claim 92 wherein the radially expandable stent is comprised of a shape memory alloy.

94. (Previously presented) The radially expandable stent of claim 72 wherein n is 8.

95. (Previously presented) The radially expandable stent of claim 72 wherein n is 6.

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96. (Previously presented) The radially expandable stent of claim 72 wherein the  $n$  proximal apices of the first portion comprise a curved outer surface and a curved inner surface,

wherein the curved inner and outer surfaces of the proximal apices each comprises a circular radius of curvature.

97. (Previously presented) The radially expandable stent of claim 96 wherein the circular radii of curvature comprise a common center point.

98. (Previously presented) The radially expandable stent of claim 96 wherein the circular radii of curvature are offset from each other.

99. (Previously presented) The radially expandable stent of claim 72 wherein the  $n/2$  proximal apices of the second portion comprise a curved outer surface and an inner surface,

wherein the curved inner and outer surfaces of the proximal apices each comprise a circular radius of curvature.

100. (Previously presented) The radially expandable stent of claim 99 wherein the circular radii of curvature comprise a common center point.

101. (Previously presented) The radially expandable stent of claim 99 wherein the circular radii of curvature are offset from each other.

102. (Previously presented) A radially expandable stent comprising one or more barbs and one or more barb tuck pads configured to retain the one or more barbs when the radially expandable stent is in a delivery configuration.

103. (Previously presented) The radially expandable stent of claim 102 wherein the one or more barbs and tuck pads are integrally formed with the stent and wherein the one or more barbs are configured to be released by the one or more barb tuck pads when the stent is in a deployed configuration.

104. (Previously presented) The radially expandable stent of claim 102 wherein the one or more barbs have a length from about 1 to about 5 mm.

105. (Previously presented) The radially expandable stent of claim 102 wherein the one or more barbs have a length from about 2 to about 4 mm.

106. (Previously presented) The radially expandable stent of claim 102 wherein the one or more barbs project radially outward from a longitudinal axis of a strut in the radially expandable stent and at an elevation angle between about 10 degrees to about 45 degrees.

107. (Previously presented) The radially expandable stent of claim 106 wherein the one or more barbs are laterally biased in a plane that is orthogonal to a plane in which the barb radial angle is formed to form a barb kick angle.

108. (Previously presented) The radially expandable stent of claim 102 wherein the stent further comprises one or more barb tuck slots and wherein the one or more barbs are received by the one or more barb tuck slots when the stent is in a delivery configuration and the one or more barbs are released from the one or more slots when the stent is in a deployed configuration.

109. (Previously presented) The radially expandable stent of claim 102 wherein the radially expandable stent is self-expanding.

110. (Previously presented) The radially expandable stent of claim 109 wherein the radially expandable stent comprises NiTi.

111. (Previously presented) The radially expandable stent of claim 102 wherein the radially expandable stent comprises one or more connector elements.

112. (Previously presented) The radially expandable stent of claim 111 wherein the connector elements comprise a proximal end and a distal end and opposing shoulder portions at the proximal end and the distal end.

113. (Previously presented) The radially expandable stent of claim 102 wherein the radially expandable stent comprises at least one serpentine ring that comprises interconnected struts that define proximal and distal apices.

114. (Previously presented) The radially expandable stent of claim 113 wherein every other strut comprises the barb.

115. (Previously presented) The radially expandable stent of claim 114 wherein the struts adjacent the struts that comprise the barbs comprise the barb tuck pad.

116. (Previously presented) The radially expandable stent of claim 113 wherein a width of the struts are tapered between the proximal apices and distal apices.

117. (Previously presented) The radially expandable stent of claim 116 wherein the struts have a maximum strut width at the proximal apices or distal apices, and a minimum strut width between the proximal apices and the distal apices.

118. (Previously presented) The radially expandable stent of claim 117 wherein a ratio of the maximum strut width to minimum strut width is between about 1:1 and about 10:1.

119. (Previously presented) The radially expandable stent of claim 113 wherein the proximal apices comprise a curved outer surface and a curved inner surface,  
wherein both the inner and outer surfaces of the apices comprise a circular radius of curvature.

120. (Previously presented) The radially expandable stent of claim 119 wherein the circular radii of curvature comprise a common center point.

121. (Previously presented) The radially expandable stent of claim 119 wherein the circular radii of curvature comprise center points that are offset.



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122. (Previously presented) The radially expandable stent of claim 102 wherein the radially expandable stent comprises a first serpentine portion integrally formed with a second serpentine portion, wherein the radially expandable stent defines a length and the first portion and second portion define outer diameters,

wherein the outer diameters of the radially expandable stent vary along their length.

123. (Previously presented) The radially expandable stent of claim 102 wherein the radially expandable stent comprises a first serpentine portion integrally formed with a second serpentine portion, wherein the radially expandable stent defines a length and the first portion and second portion define an outer diameter,

wherein the outer diameter of the radially expandable stent is substantially constant along the length.

124. (Previously presented) A radially expandable stent comprising:  
a first portion that comprises a serpentine ring that comprises  $2n$  interconnected struts, wherein the interconnected struts define  $n$  proximal apices and  $n$  distal apices;  
a second portion that comprises a serpentine ring that comprises  $n$  interconnected struts, wherein the interconnected struts define  $n/2$  proximal apices and  $n/2$  distal apices,  
wherein  $n/2$  of the  $n$  proximal apices of the first portion are integral with the  $n/2$  distal apices of the second portion;  
a barb integrally formed on every other strut in the second portion;  
a tuck pad integrally formed in the struts in the second portion that are adjacent the struts that comprise the barb; and  
connector elements integrally formed with the  $n$  distal apices of the first portion.

125. (Previously presented) The radially expandable stent of claim 124 further comprising a connector member coupled to the connector elements of the first portion.

126. (Previously presented) The radially expandable stent of claim 125 wherein the connector member comprises a serpentine ring.

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127. (Previously presented) The radially expandable stent of claim 126 wherein the serpentine ring connector member comprises  $2n$  interconnected struts that define  $n$  proximal apices and  $n$  distal apices.

128. (Previously presented) The radially expandable stent of claim 127 wherein the  $n$  proximal apices of the connector member comprise  $n$  integral connector member connector elements.

129. (Previously presented) The radially expandable stent of claim 128 wherein the  $n$  connector elements of the connector member are coupled to the  $n$  connector elements of the first portion via coupling members.

130. (Previously presented) The radially expandable stent of claim 129 wherein the coupling members comprise wire or coil wrapped around the connector elements of the connector member and the connector elements of the first portion.

131. (Previously presented) The radially expandable stent of claim 124 wherein at least one of the first and second portion comprises a set of grooves that are configured to receive release bands.

132. (Previously presented) The radially expandable stent of claim 124 wherein a width of the struts are tapered between the proximal apices and distal apices.

133. (Previously presented) The radially expandable stent of claim 132 wherein the struts have a maximum strut width at the proximal apices or distal apices, and a minimum strut width between the proximal apices and the distal apices.

134. (Previously presented) The radially expandable stent of claim 133 wherein a ratio of the maximum strut width to minimum strut width is between about 1:1 and about 10:1.

135. (Previously presented) The radially expandable stent of claim 124 wherein the one or more barbs have a length from about 1 to about 5 mm.



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136. (Previously presented) The radially expandable stent of claim 124 wherein the one or more barbs have a length from about 2 to about 4 mm.

137. (Previously presented) The radially expandable stent of claim 124 wherein the radially expandable stent is self-expanding.

138. (Previously presented) The radially expandable stent of claim 124 wherein the proximal apices of at least one of the first portion and second portion comprise a curved outer surface and a curved inner surface,

wherein both the inner and outer surfaces of the apices comprise a circular radius of curvature.

139. (Previously presented) The radially expandable stent of claim 138 wherein the circular radii of curvature comprise a common center point.

140. (Previously presented) The radially expandable stent of claim 138 wherein the circular radii of curvature comprise center points that are offset.

141. (Previously presented) The radially expandable stent of claim 124 wherein the one or more barbs project radially outward from a longitudinal axis of a strut in the radially expandable stent and at an elevation angle between about 10 degrees to about 45 degrees.

142. (Previously presented) The radially expandable stent of claim 124 wherein the one or more barbs are laterally biased in a plane that is orthogonal to a plane in which the barb radial angle is formed to form a barb kick angle.

143. (New) A radially expandable stent comprising:  
a first portion that comprises a serpentine ring that defines  $n$  proximal apices and  $n$  distal apices;  
a second portion that comprises a serpentine ring that defines  $n/2$  proximal apices and  $n/2$  distal apices; and

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connector elements, each connector element having a proximal end and a distal end, wherein the proximal ends are integrally formed with the n distal apices of the first portion and the distal ends define a distal end of the radially expandable stent.